

Rocky Flats, Colorado, Site Chemical Management Plan

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U.S. DEPARTMENT OF
ENERGY

Office of
Legacy Management

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Chemical Management Plan**

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Contents

| | | |
|-----|--|---|
| 1.0 | Introduction..... | 1 |
| 2.0 | Chemical Control Officer | 2 |
| 3.0 | Authorized Chemicals..... | 2 |
| 4.0 | Chemical Management | 3 |
| 4.1 | Material Safety Data Sheets and Other Information..... | 3 |
| 4.2 | Procurement | 3 |
| 4.3 | Storage and Use Locations..... | 4 |
| 4.4 | Handling..... | 4 |
| 4.5 | Disposal..... | 5 |
| 5.0 | Spills and Emergencies | 5 |
| 5.1 | Spill Response..... | 5 |
| 5.2 | Emergency Response and First Aid Measures..... | 6 |

Appendix

Appendix A Authorized Chemical List

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1.0 Introduction

Only the chemicals authorized by this Chemical Management Plan (CMP) may be used in Rocky Flats operations. Authorized chemicals shall be procured, handled, stored, and disposed of in accordance with this CMP. Response to chemical spills shall also be performed in accordance with this CMP.

All chemicals may present human or environmental health hazards, even if the chemical is not regulated as hazardous under any of the human health or environmental protection laws. The intent of this CMP is to strictly limit the chemicals authorized for use, such that it is tailored to address and manage the hazards posed by these authorized chemicals.

This CMP provides information specific to Rocky Flats to supplement the requirements of the following Site Operations Guide (SOG) sections and the following manuals:

- SOG Chapter 9—Non-Routine Activities
- SOG Chapter 10—Health and Safety/Training
- SOG Chapter 11—Emergencies and Corrective Action
- SOG Chapter 13—Regulatory Compliance
- SOG Chapter 14—Waste Management
- LMS/POL/S04320—*Quality Assurance Manual*
 - Personnel Training and Qualification
 - Work Processes
 - Procurement
- LMS/POL/S04321—*Health and Safety Manual*
 - Fire Prevention and Protection
 - Personal Protective Equipment
 - Compressed Gas Cylinders
 - Job Safety Analysis
 - Hazard Communication Program
- LMS/POL/S04324—*Construction Procedures Manual*
 - Solicitation Package
 - Site Control
- LMS/POL/S04326—*Comprehensive Emergency Management System*
 - Emergency Response
- LMS/POL/S04328—*Integrated Safety Management System Description with Embedded Worker Safety and Health Program*
 - Appendix A, General Approach to Worker Safety and Health Functional Areas

- LMS/POL/S04329—*Environmental Protection Manual*
— Chemical Management Program
- LMS/POL/S04334—*Procurement Manual*
— Preparation and Review of Purchase Requisitions

2.0 Chemical Control Officer

The Rocky Flats site manager shall designate a staff member as the Rocky Flats chemical control officer (CCO). The site manager shall ensure that the CCO has an appropriate level of knowledge, skills, and abilities through work experience, formal or on-the-job training, and education to properly perform the CCO duties in relation to the hazards posed by authorized chemicals. The site manager, in consultation with the CCO and the Legacy Management Support (LMS) Health and Safety organization, shall identify additional training the designated CCO may need and the reasonable time for completion of the training.

The CCO shall consult with the LMS Health and Safety (including Occupational Medicine), environmental management, and emergency response organizations as necessary to properly perform the CCO duties.

The CCO shall be the liaison with local emergency response organizations to properly perform the CCO duties.

Other specific CCO duties are described in each section of this CMP, where applicable.

3.0 Authorized Chemicals

The Authorized Chemicals List for Rocky Flats Site Operations (Authorized Chemical List) shall be approved by the site manager and maintained and administered by the CCO. The Authorized Chemical List is located in Appendix A. Among other information, the Authorized Chemical List includes the name of the chemical, authorized amount, and MSDS/CAS number for all of the typical quantities of chemicals in use or in storage at Rocky Flats.

The CCO shall revise the Authorized Chemical List as needed to add or remove a chemical and to change any quantity as needed to support site operations.

The list is divided into the following chemical use categories:

- Category 1—Environmental media analytical activities
- Category 2—Vegetation management and pest control activities
- Category 3—Document printing and copying activities
- Category 4—Janitorial and similar to consumer/household use

Chemicals that are not on the Authorized Chemical List may be used for Rocky Flats operations only if covered in an approved Job Safety Analysis (JSA) for that activity. The JSA must provide the chemical management plan for the JSA work, and the CCO must concur with the JSA requirements.

4.0 Chemical Management

Users of chemicals shall use them only for their intended use as indicated on the Authorized Chemical List and as outlined in the Material Safety Data Sheets (MSDSs). Chemical users must read and follow the manufacturers' or suppliers' use instructions and MSDSs.

Category 1 and 2 chemicals are subject to all chemical management requirements in this section. Because of the low hazard profile for Category 3 and 4 chemicals, these chemicals are only subject to certain chemical management requirements, as specified in this section.

4.1 Material Safety Data Sheets and Other Information

The CCO shall make available the following in a location that is accessible to all workers at or near the places where the chemical is used:

- Authorized Chemical List
- MSDS

The chemicals that are included in the Authorized Chemical List will also be represented by a current MSDS that will be kept and made available to all workers by the CCO in a central location at the Rocky Flats Office Building, 11025 Dover Street, and at the Rocky Flats Site property.

4.2 Procurement

Only chemicals on the Authorized Chemicals List or in an approved JSA may be purchased. The person ordering any chemicals is responsible for reviewing and following any applicable chemical procurement requirements in the *Integrated Safety Management System Description with Embedded Worker Safety and Health Program* manual and must ensure that the quantity being ordered will not result in a total quantity exceeding the in-use plus in-storage authorized limit for chemicals at Rocky Flats. The authorized amount can be found on the Authorized Chemical List.

The person ordering any Category 1 or 2 chemicals must obtain CCO concurrence with the order.

If applicable, only chemicals and quantities listed in a job-specific JSA chemical management plan may be brought on site by a subcontractor. The site lead for the work covered by the JSA, in coordination with the CCO, must routinely assess compliance and require the subcontractor to remove any chemicals or quantities not allowed under the JSA. The subcontractor must follow all requirements of this plan for storage, use, and disposal of chemicals.

4.3 Storage and Use Locations

Chemicals shall be stored in accordance with the MSDS storage requirements. These requirements include environmental conditions (e.g., temperature) and any incompatibility with other stored chemicals.

All chemicals shall be stored in their original containers with the manufacturers' labels intact. Chemicals that are being used may be transferred to appropriate use containers, unless prohibited by the MSDS instructions, AND the containers must be marked to show the chemical name and any hazardous classification or properties indicated on the manufacturer's original container label.

Category 1 chemicals, except for gases, and Category 2 chemicals that are liquids shall be stored in cabinets, drip pans, or on absorbent drip pads composed of materials that will withstand and not chemically react with spills or leaks. The storage cabinets, drip pans, or absorbent pads shall have sufficient free space to hold the contents of the largest stored chemical container if the contents were to leak out of the container.

WARNING: Acids and bases can be highly reactive and corrosive compounds. They must generally be stored in ventilated areas away from water, which can cause evolution of heat. Acids and bases should never be stored together.

Incompatible chemicals shall not be stored in the same cabinet or drip pan or on the same absorbent pad, and shall be stored in a manner that prevents the incompatible chemicals from coming into contact with each other.

Category 1 chemicals are used at the sampling locations, the sample preparation areas, and laboratory. Category 2 chemicals may be used anywhere on the Rocky Flats property, which includes areas requiring application of herbicides or pesticides.

Category 3 and 4 chemicals may be used in any location at the 11025 Dover Street Office Building or Rocky Flats Site property. The CCO shall coordinate with the users of Category 3 and 4 chemicals to designate the storage locations and amount of storage space for these chemicals. The CCO may remove, or arrange for removal, and dispose of any of these chemicals that do not comply with the designated storage space amount or location.

4.4 Handling

Handling precautions are identified in the chemical's MSDS and shall be followed using a graded approach based on the quantity of chemical used.

Category 1 chemicals are to be used in accordance with applicable analytical laboratory procedures. The volume of chemical used in each procedure is small and does not present an inhalation hazard when used with normal building ventilation. Personal protective equipment (PPE) consists of chemical resistant gloves (nitrile), a lab coat to provide skin protection for the arms, and safety glasses with side shields to provide eye protection from splashes or touching the eyes.

Acids and bases shall be carried from the storage location to the use location in rubber carriers to catch any spills if the container should leak or break. **NOTE:** When diluting an acid for general use, add acid to water; never add water to a concentrated strong acid. Never pour water onto solid bases. In general, nitrile gloves are effective PPE materials for acids and bases. Safety glasses with side shields shall be worn when pouring materials.

Category 2, 3, and 4 chemicals must be used in accordance with the manufacturers' instructions, including any handling precautions.

4.5 Disposal

The volume of chemicals allowed under the Authorized Chemicals List is strictly limited so that the amount of hazardous chemical waste generated, including waste that could be generated in a spill response, qualifies as Conditionally Exempt Small Quantity Generator hazardous waste under the Colorado Hazardous Waste Regulations. This amount is not to exceed 220 pounds of wastes defined as hazardous wastes generated or stored per month. Waste chemicals, including materials that are generated in performing spill response described in Section 5.1, shall be segregated for evaluation by the CCO and the LMS Environmental Compliance staff to determine proper disposal requirements. In some instances, disposal may be required at a permitted hazardous waste treatment, storage, and disposal facility.

The CCO shall manage waste chemicals to stay below this threshold for any hazardous wastes by arranging for proper disposal on a routine basis. Waste chemicals may only be stored pending disposal in the approved storage and use locations.

5.0 Spills and Emergencies

5.1 Spill Response

The volume of chemicals allowed under the Authorized Chemicals List is strictly limited so that the amount of chemical that could be released in a spill will be below the threshold for reporting to the National Response Center.

Except as described below for concentrated acids and bases, spills of Category 1, 2, 3, and 4 chemicals may be safely cleaned up by persons wearing PPE consisting of chemical resistant gloves, a lab coat or other long sleeve garment to provide skin protection for the arms, and safety glasses with side shields to provide eye protection from splashes or touching the eyes. Spill response precautions are identified in the chemical's MSDS and shall be followed using a graded approach based on the quantity of chemical spilled.

Spills shall be cleaned up using absorbent material to soak up any free liquid, and washing the affected area with soap and water.

For Category 1 chemicals, acid and base spill kits are to be maintained by the CCO in the storage and use area for Category 1 chemicals. Spill kits are to be inspected by the CCO or designee annually, re-stocked and re-sealed. These spill kits are for use only when the spill is generally less than 1 pint and can be safely cleaned up using normally available PPE. Larger spills of

Category 1 chemicals must be reported to the local emergency response organization, and the Rocky Flats Emergency Response Procedure shall be implemented.

5.2 Emergency Response and First Aid Measures

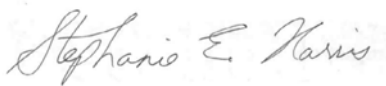
If the use or storage of chemicals creates an emergency situation, such as an unplanned significant exposure to chemicals or an unplanned significant release of chemicals, emergency assistance shall be immediately sought by calling 911.

First aid measures shall be taken to address exposures that may cause or have caused injury. Sometimes, the nature and extent of injury that may result from chemical exposure are not readily apparent, and medical attention as a precautionary measure should be immediately sought.

The MSDS contains first aid information and should be consulted pending medical attention. In general, eyes that come into contact with a chemical shall be flushed with water for 15 minutes using an eye wash station, and areas of skin that come into contact with a chemical shall be continuously flushed with water to remove the chemical.

Emergency medical facilities are identified in the Emergency Response Plan for Rocky Flats.

Approved by CCO:



Date: 12/15/08

Revisions to the Authorized Chemical List may be made by the CCO, in accordance with the CM Plan.

Appendix A

Authorized Chemical List

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Category 1—Environmental Media Analytical Activities

| Chemical Name | Authorized Amount | MSDS #/CAS | Comments | Reportable Quantity |
|-----------------------------------|--------------------------|-------------------|-------------------|----------------------------|
| Alkali solution for Ca/Mn test | 250 milliliters | M00284 | | |
| Ascorbic acid | 500 milliliters | A7608 | | |
| pH buffer solutions | 3 gallons | B5631 | | |
| Conductivity standard | 4 liters | 291-A | | |
| DR2010 Accu-vac reagents | 500 grams | NA | | |
| EDTA/EGTA solutions | 500 milliliters | M00282 | | |
| Hydrochloric acid | 500 milliliters | H3 886 | Concentrated acid | |
| Nitric acid | 5 liters | 16550 | Concentrated acid | |
| Quinhydrone | 500 grams | Q3250 | | |
| Sodium chloride Standard solution | 500 milliliters | M00374 | | |
| Sodium hydroxide | 500 grams | S4034 | Concentrated base | Section 304/ CERCLA |
| Sodium hydroxide | 500 milliliters | S4034 | Concentrated base | Section 304/ CERCLA |
| Sodium sulfite | 500 grams | S5022 | | |
| Sodium thiosulfate | 500 grams | S5230 | | |
| Sulfuric acid | 2 liters | S8234 | Concentrated acid | |
| Turbidity standards | 2 liters | 9003-70-7 | No hazard | |
| Zinc acetate | 500 grams | Z1140 | | |
| Isobutylene (isobutene) | 1 liter @500 psi | 2110 | Compressed gas | |
| Mixed gas cocktail | 1 liter @500 psi | NA | Compressed gas | |

Category 2—Vegetation Management and/or Pest Control Activities

| Chemical Name | Authorized Amount | MSDS #/CAS | Comments | Reportable Quantity |
|----------------------------------|--------------------------|---------------------------------|--------------------|---|
| Roundup herbicide | 2 gallons | 6058 | | |
| Cutter insect repellent | 6 oz. bottles | 51025 | One case | |
| Off insect repellent | 6 oz. bottles | 111886002 | One case | |
| Off Deep Woods | 6 oz. bottles | 111845004 | One case | |
| Engine oil, 15W-40 | 20 gallons | 622315001 | 2 cases/quarts | |
| Engine oil, 15W-30 | 20 gallons | 62613001 | 2 cases/quarts | |
| Oil, 2-cycle | 10 gallons | 0781319805 | 1 case/quarts | |
| Fuel—gasoline | 60 gallons | NA | Outside of vehicle | |
| Fuel—diesel | 60 gallons | AG1BF | Outside of vehicle | |
| Multipurpose grease | 20 pounds | 665005002 | | |
| d-Con rodenticide | 5 pounds | NA | | |
| Foodlube grease | 20 pounds | NA | | |
| Bearing grease | | A5088/NA | | |
| Lubriplate mineral oil | 20 gallons | NA | | |
| Hornet/wasp spray | 20 oz. bottles | 010981055 | One case | |
| Road stabilizer/dust suppressant | 10,000 gallons | NA/NA | | NA |
| Milestone herbicide | | 007887/566191-89-7 | | |
| Milestone VM herbicide | | DASCI-236/150114-71-9 & mixture | | |
| Rodeo herbicide | | 006694/038641-94-0 & mixture | | NA |
| Escort herbicide | | DU002103/74223-64-6 | | NA |
| Sustane 8-2-4 | | NA/NA | | NA |
| Telar herbicide | | DU008091/64902-72-3 | | NA |
| Vanquish herbicide | | 397/1918-00-9 | | Spills >17 gallons (based on 1,000 pounds of Dicamba) |

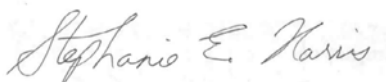
Category 3—Document Printing and Copying Activities

| Chemical Name | Authorized Amount | MSDS #/CAS | Comments | Reportable Quantity |
|----------------------|--------------------------|-------------------|----------------------------|----------------------------|
| 3M Desk Cleaner | 5 liters | 179561/mixture | EPA HazWaste # (RCRA) D001 | |
| Duster II | 2 liters | 192432/75-37-6 | Compressed gas | NA |
| Print cartridge ink | 1 liter | NA | | |
| Toner | 60 liters | PPC-0783 | | |
| Roller cleaner | 5 liters | NA/67-63-0 | | |
| Multikleen Wipes | 5 liters | NA/mixture | | NA |

Category 4—Janitorial and Similar to Consumer/Household Use

| Chemical Name | Authorized Amount | MSDS #/CAS | Comments | Reportable Quantity |
|----------------------|--------------------------|-------------------|-----------------|----------------------------|
| Auto truck de-icer | 1 liter | DEI/mixture | | |
| Static cleaner | 2 liters | BSMNC/mixture | | |
| Rust-Oleum paint | 2 gallons | NA/mixture | | |
| WD-40 | 2 liters | NA/mixture | | NA |
| Clorox bleach | 3 qt. bottles | 93098/mixture | | NA |
| Liquinox | 30 pounds | NA/25155-30-0 | | NA |

Approved by CCO:



Date: 7/28/08

Revisions to the Authorized Chemical List may be made by the CCO, in accordance with the CM Plan.

The approved list shall be kept in the master MSDS book, maintained by the CCO, and an electronic version also posted to the network share folder designated for the CM Plan. An index showing the approval dates for each subsequent CCO-approved list will also be maintained in the network share folder designated for the CM Plan.

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